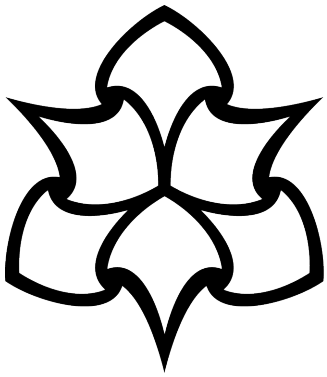

Received: 28 August 2019 | Revised: 11 June 2020 | Accepted: 17 June 2020

DOI: 10.1111/hsc.13090

ORIGINAL ARTICLE

Health and Social Care in the community

WILEY

Improving community health and social care practitioners' confidence, perceived competence and intention to use behaviour change techniques in health behaviour change conversations

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Abstract

Community health and social care practitioners play an increasingly important role in the health promotion agenda, but lack confidence in having effective health behaviour change (HBC) conversations with members of the public. This study reports the development and evaluation of a training intervention based on health psychology to improve health and social care practitioner self-rated confidence, competence and intention to use five behaviour change techniques (BCTs) in their HBC conversations. A 2-day behavioural science interprofessional skills training course plus online learning module was designed for health and social care staff across North East Scotland, teaching five evidence-based BCTs (e.g. Action Planning), plus person-centred communication skills. Participants rated confidence, competence and future intention to use the BCTs on likert scales (1–10) pre-course and post-course, and provided acceptability data. 177 participants aged 20–64 took part, qualitative and quantitative data suggested that the course had high acceptability. Paired samples *t* tests ($n = 120$ with complete data) showed significant improvements in confidence, competence and intention following the course, which remained significant with a conservative analysis ($n = 174$) assuming no change for missing data. Perceived competence in Action Planning increased most during the course (mean change 3.09). In conclusion, health psychology-based skills training can improve practitioner confidence, competence and intention to use evidence-based BCTs; further evaluation is needed to assess practice change.

KEYWORDS

action planning, behaviour change, behaviour change techniques, communication skills, confidence, health promotion, health psychology

1 | INTRODUCTION

1.1 | Health and social care practitioners' role in the health behaviour change agenda

Across the western world, policy makers and healthcare practitioners alike see behaviour change as essential to improving health and reducing the spiralling burden of chronic disease (e.g. World Health Organisation, 2012). In the UK, 54% of all deaths in 2017 were linked to amendable or preventable factors such as smoking, alcohol, physical inactivity or diet (Office for National Statistics, 2019), indicating that behaviour change is needed both for prevention and self-management of chronic disease (NHS England, Care Quality Commission, Health Education England, Monitor, Public Health England, & Trust Development Authority, 2014) Recognition of modifiable social determinants of health such as poor housing, unemployment and associated mental health problems is also increasing (Marmot et al., 2010; Taylor, Repetti, & Seeman, 1997).

Behaviour change advice and support, also known as "behaviour change interventions," are now within the remit of an ever-widening range of community-based health and social care practitioners' roles. Primary care doctors, community nurses, firefighters, midwives, social workers, probation officers and physiotherapists are amongst those now expected to discuss diet, exercise, smoking, mental health and wellbeing, financial issues or housing in their consultations (NICE, 2007, 2014; NHS England, 2014; NHS England, Care Quality Commission, Health Education England, Monitor, Public Health England, & Trust Development Authority, 2014). In England, the Making Every Contact Count (MECC) initiative argues that every member of the health workforce should be able to initiate health and well-being conversations (Nelson, 2013; NHS England, Care Quality Commission, Health Education England, Monitor, Public Health England, & Trust Development Authority, 2014). Whilst this can be effective (Kaner et al., 2013; White & O'Reilly, 2017) a recent survey of 1,387 healthcare practitioners in England suggests poor implementation of this health behaviour change agenda. There was low general awareness of the policy and the staff respondents reported offering behaviour change interventions in only half of consultations in which they felt this is needed (Keyworth, Epton, Goldthorpe, Calam, & Armitage, 2018). Consequently, in order for initiatives such as MECC to be effective, it is crucial that practitioners are trained in evidence-based approaches to support people to improve their health.

1.2 | Behaviour change techniques: The ingredients of behaviour change interventions

At the same time, behavioural science has helped in understanding the complexities of effective behaviour change support, and the active ingredients of effective interventions which inform what a practitioner might helpfully say and do in an opportunistic behaviour change consultation. In the Behaviour Change Technique (BCT) Taxonomy project (Michie et al., 2013) behavioural scientists including health psychologists agreed a shared language of 93 BCTs used alone or in combination in interventions to support behaviour change. The National Institute of Clinical Excellence (NICE, 2014) recommend that a 10–15 min "low intensity" health behaviour change conversation could contain several BCTs to help people build their motivation, their skills and confidence to take action and/or use helpful prompts and cues in the environment (The Scottish Government, 2010). Motivation-building BCTs in the BCT Taxonomy include providing Information about Health Consequences (labelled "5.1" in the taxonomy), and assisting the person to weigh up Pros and Cons of change (Britt, Hudson, & Blampied, 2004) (number 9.2 in the taxonomy). Action- and environment-focussed techniques include supporting with behaviour change Action Planning (1.4), Self-Monitoring of Behaviour (2.3) and setting up helpful Prompts and Cues (7.1) (NICE, 2014). Amongst others, these techniques have been shown to be effective in supporting health behaviour change in systematic reviews (Bull et al., 2018; Dombrowski et al., 2012) when used in a person-centred manner (Rollnick et al., 2005). Behavioural science is also exploring "how" these BCTs are delivered (The Scottish Government, 2010) including the importance of person-centred communication and listening skills where the practitioner guides the person themselves to decide if, what and how to change (Miller & Rollnick, 2012). Although this science is early in development, it is clear that BCT selection, tailoring and effective delivery is complex. Practitioners need strong behaviour change skills to avoid damaging relationships with

What is known about this topic?

- Community health and social care practitioners are vital members of the health promotion workforce given their trusted status and regular face-to-face contact with the public
- Practitioners have previously reported a lack of confidence and competence in holding effective health behaviour change conversations with the public.
- Health psychologists have elucidated key behaviour change techniques (BCTs) and approaches which could be applied.

What this paper adds?

- This study applied health psychology to develop, deliver and evaluate health behaviour change training for health and social care practitioners.
- 177 participants took part in a pre-post course questionnaire-based evaluation.
- The training was highly acceptable and statistically significant improvements were recorded in confidence, competence and intention to use BCTs taught.
- This paper identifies a feasible and potentially effective way of improving population health by upskilling the health and social care workforce.

the patients, service users or members of the public with whom they work (Britt et al., 2004; Rollnick et al., 2005).

1.3 | Health and social care professional competence, confidence and intention in health behaviour change

NICE proposes that "behaviour change, knowledge skills and delivery techniques comprise a formal element of initial training, work placements and ongoing continuous professional development (CPD) for all those who deliver health and social care services" (NICE, 2014, p.20). Yet evidence suggests that this is something that few practitioners have been able to access (Byrne-Davis et al., 2018; Nelson et al., 2014). Where support exists, it tends to be online and behaviour-specific (Brose, West, Michie, & McEwen, 2014). However, as described above, health behaviour change skills are complex and need to be flexibly applied to multiple behaviours. Online training rarely includes opportunities for applied, repeated practice of techniques with feedback, yet achieving accuracy, fluency and generalisation are crucial when learning new skills (Haring & Eaton, 1978; NHS Health Scotland, 2013). Students and qualified practitioners also tend to be taught behaviour change skills in single professional groups (Chisholm, Hart, Mann, & Peters, 2014) whereas prevention and self-management of health conditions is an issue for multi-disciplinary teams (Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013) Health and social care is also becoming increasingly integrated (The Scottish Government, 2015). Research suggests that health and social care practitioners report feeling low in confidence, motivation and training for offering behaviour change interventions as part of their routine consultations, reporting that this is not their role and they are not sufficiently skilled (Flemming et al., 2016; Furness et al., 2015; Johnson, Jackson, Guillaume, Meier, & Goyder, 2010; Nelson et al., 2016). Despite advances in behavioural science in understanding the ingredients of effective behaviour change interventions, lack of adequate training and support is a major barrier to the successful implementation of the health behaviour change agenda.

1.4 | This study

In this study, training to promote professional practice change was approached as a behaviour change intervention in itself. This meant explicitly focussing on practitioner behaviour change, with the aim being ultimately that practitioners would have more effective behaviour change conversations in routine practice. BCTs and other teaching methods were applied in the 'classroom' to facilitate this. This study reports on the development and initial evaluation of a two-day blended learning behaviour change training course for health and social care practitioners, which applied teaching methods and evaluation informed by health psychology and focussed on inter-professional learning. The study research questions were (a) to what extent does the course improve participants' self-rated confidence, competence and intention to deliver five widely applicable evidence-based BCTs as core components of effective behaviour change interventions? and (b) to what extent is the course acceptable?

2 | METHODS

2.1 | Design

This study followed the SQUIRE guidelines for quality improvement studies (Ogrinc et al., 2016). This section reports both the design of the training and of the mixed methods pre-post training evaluation. The training intervention was called "Helping People Change for Health" and consisted of a pre-course online e-learning module and a 2-day face-to-face skills course. The e-learning module called "health behaviour change level 1" was designed by NHS Health Scotland to provide background knowledge on behaviour change, (understanding about health inequalities, social and behavioural determinants of health, behaviour prevalence in the Scottish population). The 2-day face-to-face training course was designed by health psychologists with expertise in behavioural science employed within a public health department in North East Scotland.

The training aimed to teach participants to use 5 key BCTs from the BCT Taxonomy v1 (Michie et al., 2013) which have been shown to be effective and relevant when used in health behaviour change conversations (e.g. Bull et al., 2018; Dombrowski et al., 2012). BCTTv1 labels and definitions are provided in Table 1. To facilitate their effective use and ensure a conversational flow, practitioners were also taught a brief intervention conversation framework and person-centred conversation skills from the Motivational Interviewing communication approach (Miller & Rollnick, 2012) (Table 1). Together these may be considered the "what" and "how" of health behaviour change (The Scottish Government, 2010).

The 2-day training course was also conceptualised as a healthcare professional behaviour change intervention, using behavioural science in the training delivery to maximise its effectiveness in changing health professional confidence, competence, intention and ultimately practice. It was designed with a focus on practice change, to be skills-based, interactive and promote inter-professional learning. Ten main BCTs were selected as teaching techniques used by facilitators, included, with examples, in Table 2. Additionally, course examples and scenarios were tailored to participants' work settings to ensure that the course was applicable and learner-centred, through participants providing anonymised case examples and information in a pre-course questionnaire. The two days were typically held one week apart to facilitate between-session practice and reflection. The course facilitators encouraged participants to share experiences and best practice ideas.

The course was facilitated by four health psychologists, one clinical psychologist and five health improvement specialists working in pairs to deliver the course in line with the structure and approach detailed in the training course manual (available on request). Facilitators were trained by the overall course lead through a structured programme of: (a) approximately 10 hours of relevant reading

TABLE 1 BCTs and person-centred conversation skills taught in the course

BCT name (labels from Michie et al., 2013)	BCT Definition (from Michie et al., 2013)
5.1 Information about Health Consequences	Provide information (e.g. written, verbal, visual) about health consequences of performing the behaviour
9.2 Pros and Cons	Advise the person to identify and compare reasons for wanting (pros) and not wanting to (cons) change the behaviour (includes "Decisional balance")
1.4 Action Planning	Prompt detailed planning of performance of the behaviour (must include at least one of context, frequency, duration and intensity). Context may be environmental (physical or social) or internal (physical, emotional or cognitive) (includes "Implementation Intention") *Note: evidence of action planning does not necessarily imply goal setting, only code latter if sufficient evidence*
2.3 Self-Monitoring of Behaviour	Establish a method for the person to monitor and record their behaviour(s) as part of a behaviour change strategy
7.1 Prompts and Cues	Introduce or define environmental or social stimulus with the purpose of prompting or cueing the behaviour. The prompt or cue would normally occur at the time or place of performance
Person-centred communication skills name	**Person-centred communication skills definition** (all from Kaner et al., 2013 and Miller & Rollnick, 2012)
Brief intervention conversation framework	This included four conversational stages commonly included in a brief intervention: Raising the Issue, Exploring Experiences, Tailoring Tools, Effective Endings
Open Questions	A question typically beginning with "what" 'how" or "how come" inviting the person to input on a topic, whilst focusing attention in a particular direction
Affirmations	Recognising and acknowledging what is good including the individual's strengths, to build rapport and confidence to change.
Reflections	A statement that makes a guess as to what the person means.
Summaries	Reflections that pull together several things that a person has said
Using the Elicit-Provide-Elicit approach when providing information	Effectively providing information about health through asking permission to provide information and finding out what a person would like to know ("Elicit"), providing the information or advice ("Provide") and checking back to inquire about the person's understanding, interpretation or response to what you have said ("Elicit")

(b) observation of at least one full course (c) 2 hours of one-to-one discussion and practice with an experienced facilitator (d) co-facilitating parts of a course and receiving feedback based on fidelity to the manual before (e) fully co-facilitating a course. The facilitators met periodically to discuss any delivery difficulties and facilitators shadowed each other to assess and discuss fidelity to the manual.

2.2 | Participants

The course was advertised to health and social care practitioners working in North East Scotland and advertised through weekly e-bulletins sent to community health and social care organisations, on relevant websites, training catalogues and events. Participants were eligible to attend the course if (a) they could attend both training days (b) they confirmed their manager would support them to use the knowledge and skills from the course in their practice and (c) they could practise their skills in between sessions. All eligible practitioners were welcome to take part in the course and evaluation regardless of prior training and experience. As part of the pre-course questionnaire information, participants were informed that their anonymised evaluation data may be written up as a future research publication and provided their informed consent to take part in the evaluation and this future secondary data analysis for the research write-up.

2.3 | Measures

Participants completed measures at two key points: pre-course and post-course. They also completed acceptability measures mid-way through the course. The evaluation data collected were as follows:

2.3.1 | Demographic information

To explore course participation, in the pre-course questionnaire participants were asked to provide their age, gender, work organisation type, working region within North East Scotland, number of years in profession, nationality, and previous training in behaviour change. They were also asked to provide examples of (a) who they have HBC conversations with, (b) where these take place and (c) which behaviours they discuss, to help tailor the course examples and practice scenarios to their needs.

2.3.2 | Outcome data: confidence, competence and intention ratings

Confidence to perform a specific task (arguably related to the concepts of self-efficacy and perceived behavioural control) is one of the strongest psychological predictors of behaviour (Azjen, 1991; Bandura, 2006). Where people have low confidence to perform a task,

TABLE 2 Application of 10 core BCTs by facilitators to encourage practice change

BCT applied (labels from Michie et al., 2013)	Application of BCT in course teaching methods
1.1 Goal Setting (behaviour)	On day 1 participants reflected on practices they aimed to change through attending training
1.2 Problem solving	Problem solving session on day 2 where participants discuss challenges they had faced implementing learning following day 1 and agree solutions to overcome these
1.3 Action planning	Action planning sheets facilitated planning of concrete, specific implementation intention participants wished to enact following each day of training
1.9 Commitment	Participants encouraged to share their action plans with the group at the end of each day, using "I will" statements
2.2 Feedback on Behaviour	Participants gave and received feedback on role play practice
2.3 Self-monitoring of behaviour	Participants given a self-monitoring diary to monitor use of BCTs in their health behaviour change conversations between day 1 and day 2 and time to reflect with peers on what they had learned from this self-monitoring on the day 2.
4.1 Instruction on how to perform the behaviour	Some minimal written and verbal information provided on performing the BCTs
6.1 Demonstration of the behaviour	Modelling through participants reading devised scripts and watching video examples of BCTs delivered well and less well
8.1 Behavioural practice and rehearsal	Multiple opportunities to practice individual BCTs and whole conversations
8.7 Graded tasks	Exercises became progressively more difficult (e.g. focussing on using one BCT, then two together or in a more complex role play) to facilitate skill building, from accuracy, to fluency, then to facilitate generalisation

they are unlikely to initiate, maintain or persevere when it becomes difficult. Intention to perform a task is also thought to be proximally predictive of behaviour in social cognition models (e.g. Azjen, 1991) and self-rated competence is a commonly applied measure of healthcare professional development (e.g. EdCan, 2006). In this study, participants rated their confidence, competence and intention to perform each BCT taught on a 1(lowest) to 10(highest) scale, which includes sufficient response options to ensure that the scale is sensitive but avoids overwhelming respondents with too many response options (Bandura, 2006; OECD, 2013). The measures chosen were grounded in traditional pragmatic evaluation methodology based on social cognitive models (e.g. Judson & Burden, 1980); ten-item rating scales have been shown to have adequate reliability, validity, discriminating power and be preferred by respondents (Preston & Colman, 2000).

Each participant therefore provided numeric confidence, competence and intention ratings before and after the course for each of the 5 BCTs. A sample size calculation (based on a 95% confidence level, a health and social care practitioner population of 13,000 and confidence interval of 10) suggested that a minimum sample size of $n = 95$ was needed.

2.3.3 | Acceptability data

Anonymous feedback forms following both Day 1 and Day 2 were designed to provide additional insights into course acceptability. These contained a mixture of closed questions (including 0–10 numeric ratings) and open-ended questions based on standard course evaluation forms used in the department collecting quantitative and qualitative acceptability data. To facilitate course delivery, but not analysed for this study, following Day 1 participants were asked open-ended questions on their view of the session and what else should be covered next time. To evaluate acceptability, on Day 1 participants rated the time spent practising skills and other course activities as either "not enough," "about right" or "too much." Following Day 2 participants repeated these ratings and rated the extent to which the course overall was (a) interesting, (b) relevant, (c) well-presented, (d) met its objectives and (e) met the participant's learning needs, on a 0 (not at all) to 10 (completely) scale. They also responded to an additional open-ended question following Day 2: "what was most useful about the course?" The purpose of including qualitative acceptability data in this predominantly quantitative pre-post course evaluation was one of Complementarity or Enhancement (Reeping, Taylor, Knight, & Edwards, 2019), to add more in-depth insights into participant perceptions of specific teaching techniques and approaches on the course.

2.4 | Procedure

After enrolling onto the course, participants completed a pre-course questionnaire, completed the e-learning module and the two-day face-to-face course, before completing the post-course measures.

2.5 | Ethical considerations

The CPD training courses were delivered and evaluated as a routine aspect of NHS service provision and evaluation, and staff took part in their usual work time, therefore this evaluation was granted NHS exemption from ethical approval. Secondary data analysis of the evaluation data for publication was not considered by the NHS Research Ethics Committee to require ethical approval. Participants gave their consent for the evaluation data to be written up for publication via an opt-in tick box on the pre-course questionnaire and accompanying assurance that this was voluntary and would not affect their participation on the course. Participants were also assured that providing demographic information was optional. Feedback forms were anonymous and unlinked to the other data. Evaluation data were inputted onto an excel spreadsheet, stored securely and accessible only to the course team.

2.6 | Analysis

The quantitative outcome data were analysed using SPSS version 22. Exploratory descriptive analyses and missing values analysis were initially conducted and exploratory inferential statistics was investigated if the data were missing in a random or non-random manner. Skewness and kurtosis for distributions of confidence, competence and intention ratings were visually and numerically inspected against standard acceptable limits. Originally a repeated measures MANOVA was planned with post-hoc tests to further explore statistically significant findings,. In response to peer review feedback, separate paired samples *t* tests were instead conducted to compare mean pre-post confidence, competence and intention ratings for the 5 BCTs.

The quantitative acceptability data collected from feedback forms were analysed descriptively (percentages, means and standard deviations as appropriate). Inductive qualitative data analysis was conducted to analyse responses to the open-ended feedback form question "What did you find most useful about the course?" to explore participants' views of effective course components. A semantic approach was applied, looking for "surface-level" meaning and following Braun and Clarke's (2006) thematic analysis method. One author led the qualitative data analysis; the other checked the emerging coding framework and cross-checked examples. Any disagreements were discussed and the final thematic map was agreed on by both authors.

3 | RESULTS

3.1 | Training intervention delivery

Helping People Change for Health was delivered to 177 health and social care practitioners from across North-East Scotland in 15 cohorts over a 2.5-year period from Spring 2014 to Autumn 2016. The 15 courses were all fully subscribed with a waiting list for attendance. Four participants attended one day only, citing urgent work commitments. Ten participants booked on the course but did not attend on the day, seven cited urgent work commitments, three were unwell.

3.2 | Treatment of data

Examining the quantitative pre-post evaluation data, 120 participants had complete data for pre-course and post-course confidence, competence and intention outcome measures for all 5 BCTs. The majority of the missing data was because of a photocopying error affecting two of the final cohorts, in which participants did not receive one page of the post-course questionnaire. In line with this, comparing participants with missing and non-missing data statistically, missing data were more likely for more recently completed cohorts [$t(174) = -2.75$, $p < .01$], but did not vary by any participant factors (e.g. age or gender).

For the main outcome analyses, two versions were performed: the analysis excluding missing data pairwise ($n = 120$) and a conservative analysis of participants ($n = 174$) where missing data for a variable could be imputed with a "no-change" score (i.e. for a participant missing a post-course intention rating for "Pros and Cons" BCT, we imputed their pre-course score on this variable). Three further participants were excluded from the analysis as they had both pre-course and post-course data missing for one or more of the same variables making imputation impossible. Skewness and kurtosis ratings for the 30 confidence, competence and intention variables all lay within the acceptable range (George & Mallery, 2010) making parametric tests suitable. Cronbach's alpha for confidence, competence and intention items were 0.86, 0.85 and 0.89, respectively, indicating high internal consistency.

Regarding the written acceptability feedback data, a total of 162 completed anonymous feedback forms were completed after Day 1 (91% response rate) and 177 after Day 2 (100% response rate) and analysed as described in the methods section. Regarding the thematic analytic process, the checking coder made two suggestions when cross-checking the coding framework, both were agreed to by the main coder.

3.3 | Participant characteristics

Table 3 displays characteristics of 177 participants attending the training courses (respondent numbers varied since responses were optional). Participants were mostly British women working in the NHS attending their first health behaviour change training. Participants were aged between 22 and 64 (mean 41.81, standard deviation 11.90) with between 0 and 32 years' experience (mean 4.76, standard deviation 6.22). These demographics are reflective of the characteristics of the NHS Scotland non-medical/dental workforce (Information Services Division, 2018).

The majority of participants ($n = 156$) described the health behaviour(s) they discuss with members of the public in their role. The most commonly listed were healthy eating ($n = 89$), smoking ($n = 62$),

alcohol ($n = 48$), physical activity ($n = 43$) and medication adherence ($n = 33$). A range of others were less commonly mentioned, namely substance misuse ($n = 20$), oral health ($n = 7$), sleep ($n = 4$), appointment attendance ($n = 4$), sexual behaviours ($n = 2$), caffeine ($n = 2$) and foot care ($n = 1$).

3.4 | Effects on confidence, competence and intention

Pre-course and post-course rating means and standard deviations are presented in Table 4. Mean ratings of confidence, perceived competence and intention were higher for all BCTs following the course. The largest mean change was for perceived competence around Action Planning (mean change + 3.02). The smallest mean change was for intention to perform the BCT Information about Health Consequences (mean change + 0.41).

As displayed in Figure 1 and Table 5, paired samples *t* tests indicated that mean confidence, competence and intention ratings were statistically significantly higher following the course [$p < .05$] across all variables, apart from for intention ratings for Information about Health Consequences, where the mean score did not significantly change [$p = .142$].

As a sensitivity test, a second set of paired samples *t* tests with the conservative analysis of 174 participants was applied, with "no-change" assumed for those with missing data. Again, all differences were statistically significant apart from intention ratings for Information about Health Consequences [$p = .155$].

3.5 | Acceptability

The additional acceptability data collected via anonymous feedback forms at the end of each day indicated high acceptability. Quantitative ratings were completed between 162 and 177 participants; a summary is presented in Table 6.

Qualitative feedback data were provided by 166 participants (94%) responding to the open-ended question "What did you find most useful about the course?" As shown in the thematic map (Figure 1), the analysis indicated that two main themes appeared to fit these additional acceptability data best, (Teaching Methods; Behaviour Change Course Content) and that six sub-themes were relevant.

Theme 1 "Teaching Methods" focussed on the teaching approaches used. In sub-theme 1 (behaviour change methods of teaching), comments indicated that participants welcomed "*practising skills once information was provided to ensure competency for carrying out work*" (anonymous participant ID 66), suggesting use of BCTs such as Behavioural Practice and Rehearsal as teaching methods was acceptable and supported participants' learning. Tailoring learning (sub-theme 2) to each group, such as through the trainers discussing (anonymised) case studies and examples elicited directly from participants through the needs assessment was highlighted by several participants as a useful teaching method. The group learning experience (sub-theme 3) made up the final sub-theme within theme 1, whereby participants highlighted the

TABLE 3 Participant characteristics

Characteristic (n = number responding to each question)	n (%)
Gender ($n = 160$)	
Women	140 (88%)
Men	20 (12%)
Age ($n = 153$)	
21–30	38 (25%)
31–40	26 (17%)
41–50	38 (25%)
51–60	49 (32%)
61–70	2 (1%)
Nationality ($n = 151$)	
British	141 (93%)
European	7 (5%)
Non-European	3 (2%)
Job role ($n = 160$)	
Nurse	28 (18%)
Health improvement/promotion practitioner/ coordinator/advisor	20 (13%)
Wellbeing coordinator	19 (12%)
Support worker	17 (11%)
Project worker/manager	13 (8%)
Care coordinator/advisor/ manager	9 (6%)
Occupational therapist	9 (6%)
Physiotherapist/ technical instructor	9 (6%)
Social worker	8 (5%)
Midwife/health visitor	6 (3%)
Dietician	5 (3%)
Other including criminal justice key workers	17 (11%)
Years in profession ($n = 154$)	
Less than 1 year	30 (19%)
1–5 years	81 (53%)
6–10 years	17 (11%)
11–15 years	14 (9%)
16–20 years	8 (5%)
21+ years	4 (3%)
Employer ($n = 156$)	
National health service	93 (60%)
Council	35 (22%)
Voluntary organisation	27 (17%)
Self-employed	1 (1%)
Attended previous HBC training? ($n = 154$)	
Yes	37 (24%)
No	117 (76%)

Note: Percentages are rounded to the nearest whole number.

TABLE 4 Mean and standard deviation scores (all participants) for the three outcome measures

	Confidence		Competence		Intention	
BCT label	**Pre-course**	**Post-course**	**Pre-course**	**Post-course**	**Pre-course**	**Post-course**
5.1 Information about health consequences	6 (2.05)	7.54 (1.29)	5.95 (1.86)	7.48 (1.19)	8.42 (2.05)	8.83 (1.44)
	n = 141	*n* = 161	*n* = 144	*n* = 160	*n* = 144	*n* = 159
9.2 Pros and Cons	5.98 (2.08)	8.03 (1.26)	5.74 (2.06)	7.96 (1.17)	8.03 (2.19)	8.63 (1.59)
	n = 140	*n* = 161	*n* = 143	*n* = 160	*n* = 144	*n* = 159
1.3 Action Planning	5.34 (2.59)	7.94 (1.36)	4.85 (2.59)	7.87 (1.37)	7.25 (2.73)	8.58 (1.52)
	n = 139	*n* = 160	*n* = 141	*n* = 160	*n* = 142	*n* = 159
2.3 Self-monitoring of behaviour	6.19 (2.33)	8.05 (1.40)	5.85 (2.30)	7.93 (1.35)	7.79 (2.44)	8.49 (1.62)
	n = 139	*n* = 161	*n* = 143	*n* = 160	*n* = 142	*n* = 159
7.1 Prompts and cues	5.91 (2.33)	8.04 (1.39)	5.41 (2.42)	7.89 (1.41)	7.59 (2.2)	8.59 (1.52)
	n = 141	*n* = 168	*n* = 143	*n* = 167	*n* = 144	*n* = 166

Note: Mean (standard deviation) scores and *n* = responses to each question

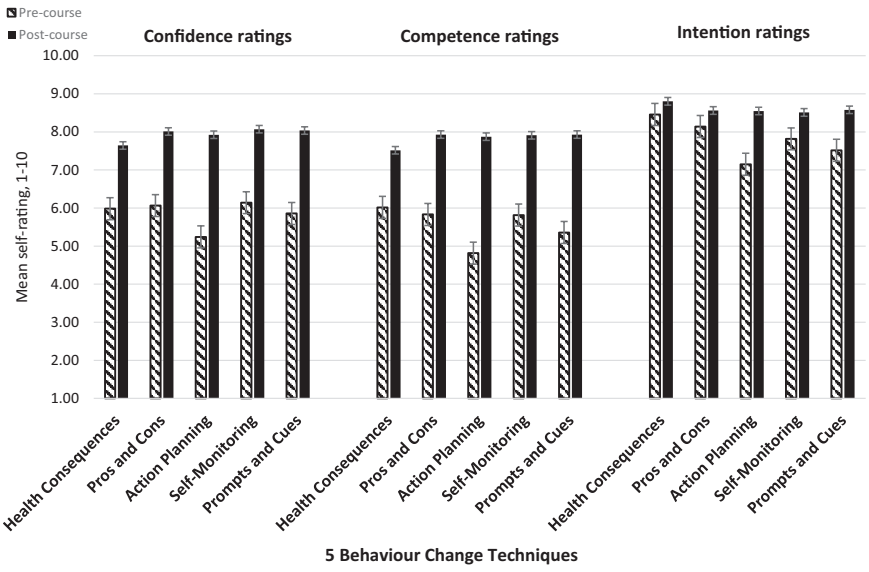

FIGURE 1 Participant self-rated confidence, competence and intention to deliver 5 BCTs, pre-course and post-course (*n* = 120 with complete data)

value of *"meeting others and listening to their experiences and sharing knowledge"* (P171). Overall, this suggested that use of BCTs, tailoring and group facilitation as teaching methods were acceptable and perceived as useful to participants.

Theme 2 "Behaviour Change Course Content" focussed on participants' feedback on the course content, which grouped thematically into three aspects of course content: the brief intervention conversation framework offered (sub-theme 4), listening skills taught (sub-theme 5) and the five behaviour change techniques to use (sub-theme 6). Figure 2 includes illustrative quotes for each sub-theme. This suggested that when teaching behaviour change skills, not only were the BCTs provided acceptable and important to participants (known as the "what" of behaviour change), but also the person-centred communication skills (the "how" of behaviour change, e.g. Miller & Rollnick, 2012) and an overall conversational flow framework. Overall, participant comments indicated that the course had been acceptable in introducing them to "*practical methods that work*" (P92), in a way that made them more likely to implement theory and evidence into their real-life practice.

4 | DISCUSSION

This study evaluated a blended learning health behaviour change training course with 177 community health and social care practitioners in North East Scotland. This explored practitioners' improvements in confidence, perceived competence and intention to use five BCTs in conversations to help members of the public with whom they work to change health behaviours. Analysis of mixed methods acceptability data suggested that participants found the

TABLE 5 Mean, standard deviation and pre-post differences in confidence, competence and intention ratings for 120 participants with complete data

		Pre-course	Post-course		
		Mean (*SD*)	Mean (*SD*)	*t* (119)	*p*
5.1 Information about health consequences	Confidence	5.95 (2.00)	7.62 (1.27)	8.62	<.001
	Competence	6.04 (1.82)	7.52 (1.13)	8.31	<.001
	Intention	8.46 (2.01)	8.76 (1.56)	1.48	.142
9.2 Pros and Cons	Confidence	6.08 (2.04)	7.99 (1.21)	9.86	<.001
	Competence	5.85 (2.02)	7.91 (1.15)	10.64	<.001
	Intention	8.13 (2.15)	8.52 (1.71)	2.00	.048
1.3 Action planning	Confidence	5.26 (2.63)	7.91 (1.28)	10.70	<.001
	Competence	4.83 (2.63)	7.86 (1.37)	11.73	<.001
	Intention	7.12 (2.75)	8.51 (1.57)	5.64	<.001
2.3 Self-Monitoring of Behaviour	Confidence	6.17 (2.36)	8.05 (1.40)	8.43	<.001
	Competence	5.86 (2.29)	7.90 (1.35)	9.49	<.001
	Intention	7.80 (2.42)	8.47 (1.66)	3.26	.001
7.1 Prompts and Cues	Confidence	5.80 (2.27)	8.03 (1.38)	9.72	<.001
	Competence	5.36 (2.45)	7.92 (1.34)	10.97	<.001
	Intention	7.50 (2.18)	8.55 (1.50)	5.06	<.001

Note:: *p* values are provided as exact figures unless they are <0.001; $p < .05$ was interpreted as indicating statistically a significant difference.

TABLE 6 Quantitative ratings of course acceptability

Balance of course activities questions. Percent of participants rating balance of course activities as "about right" rather than "not enough" or "too much"		**Quantitative acceptability questions from 0 = "not at all," 10 = "completely".**	
Amount of material covered	Day 1:96% Day 2:98%	How interesting was the course?	Mean 8.67 (Standard Deviation 1.13)
Questions and discussion	Day 1:97% Day 2:95%	How relevant was it to your work?	8.5 (1.63)
Time for skills practice	Day 1:92% Day 2:86%	How well presented was it?*	9.10 (1)
Time for breaks and lunch	Day 1:93% Day 2:98%	To what extent did it meet its objectives?*	9.10 (1.08)
Time for trainer talking	Day 1:99% Day 2:98%	To what extent did it meet your learning needs?*	8.76 (1.39)
Time for explanations	Day 1:95% Day 2:94%		

Note: For balance of course activities questions, n=162 day 1, n=177 day 2. For quantitative acceptability questions, n=177 except for where * for these, n=176.

course acceptable and that its focus on practical skills and implementation of behavioural science was useful. Our pre-post course analyses showed significant improvements in practitioners' ratings of confidence, perceived competence and intention to use five BCTs in their practice following the course, with the exception of intention to provide Information about Health Consequences, which was already strong before the course. Many training evaluations do not move beyond acceptability (Byrne-Davis et al., 2017) which is a necessary but insufficient measure of whether resources were well-utilised (Sachdeva et al., 2014). Our study represents an important investment of the organisation, trainers and participants in understanding the psychological determinants of change, to help ascertain and maximise training usefulness in practice (Weisner & Satre, 2016) sparking future research to build on these exploratory findings.

Our findings agree with other evaluations of health behaviour change training (Darnell, Dunn, Atkins, Ingraham, & Zatzick, 2016; Thomas, Passfield, Coulton, & Crone, 2016) but unlike others, we did not teach a purely motivational approach or evaluate using the Behaviour Change Counselling Index (Lane et al., 2005). We taught health and social care practitioner's five specific BCTs to use in

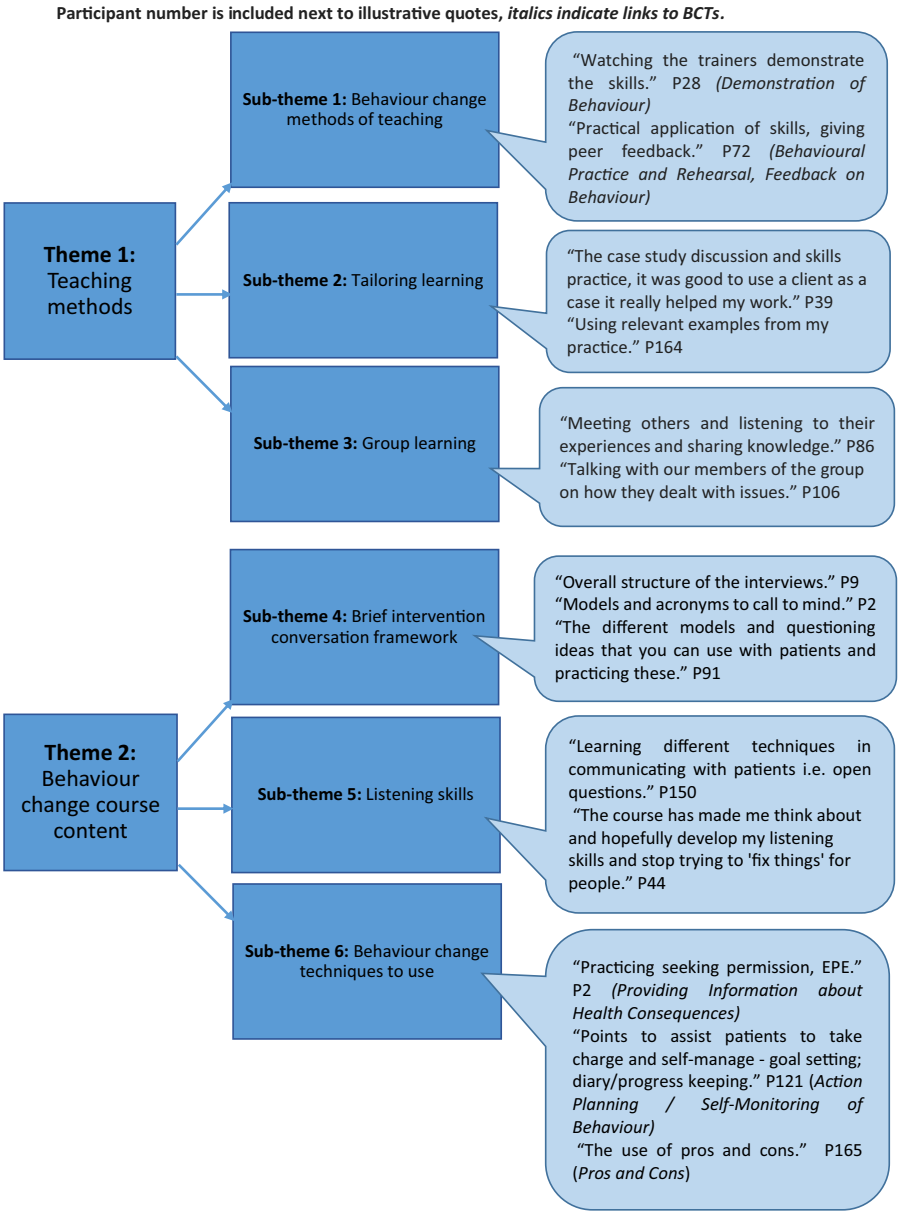

FIGURE 2 Thematic map summarising qualitative acceptability feedback data

conversations. These were aimed at helping members of the public become *motivated* (Information about Health Consequences, Pros and Cons) to make healthy changes, but also to take *action* in making health behaviour changes (Action Planning, Self-Monitoring of Behaviour) and use *prompts* (Prompts and Cues) in the environment. These are three essential facets of health behaviour change, selected for their evidence base and relevance in practice (Dombrowski et al., 2012; The Scottish Government, 2010). These and other BCTs are key active ingredients or the "what" of behaviour change support provided in interventions (Bull et al., 2018; Dombrowski et al., 2012; Michie et al., 2013). Confidence, perceived competence and intention to introduce BCTs is crucial to investigate since UK practitioners are now routinely expected to use BCTs in their practice to implement the behaviour change agenda (NICE, 2014). We also focussed on person-centred counselling skills from Motivational Interviewing as essential to the "how" of delivery, known as the "MI spirit" in behaviour change (Copeland, McNamara, Kelson, & Simpson, 2015).

Conceptualising the training itself as a behaviour change intervention, facilitators also used BCTs as teaching techniques within the course. This teaching style reflects educational literature advocating for learner-centred education including interaction, demonstrations, repeated practising and feedback (Berkhof, van Rijssen, Schellart, Anema, & van der Beek, 2011). Active learning techniques such as group discussions about cases and tailoring scenarios help learners construct meaning from new information (Michael, 2006) and encourage deeper information processing (Craik & Tulving, 1975). They also ensure relevance and applicability (Berkhof et al., 2011). Other techniques were more specifically focussed on behaviour change, such as graded task difficulty as the course progressed to improve accuracy, to fluency, automaticity and eventually generalisation of

skills and maintenance (Haring & Eaton, 1978). Increasingly, providers of emergency medical CPD courses recognise that their courses aim to change behaviour as well as enhance knowledge (Bull, Dharni, Byrne-Davis, & Hart, 2017; Pearson, Byrne-Davis, Bull, & Hart, 2018). Encouragingly, like in this course, such providers are beginning to explicitly focus on the behavioural targets of training and to incorporate action-focussed BCTs such as Problem Solving (Gollwitzer, 1999) to help participants identify and overcome future barriers to implementing learning in their real-life context (Byrne-Davis et al., 2017, Pearson, Byrne-Davis, Bull, & Hart, 2018, p.49). Whilst time pressures in training are ever-present, the blended learning approach meant that underlying knowledge could be taught ahead of time online. In the qualitative analysis, participants endorsed the use of BCTs as teaching techniques, suggesting it is desirable that programmes are embedded in behavioural science.

Group work and interprofessional discussion was another course aspect that was seen as particularly useful by participants. It is well-recognised that collaborative learning and effective interprofessional working is seen as a "*key quality issue*" (p.47, McPhearson, Headrick, & Moss, 2001), vital for effective healthcare. Whilst not formally evaluated, offering a forum for busy practitioners to learn together and share expertise may have promoted knowledge and respect as well as competence in interprofessional communication (Reeves et al., 2013).

Participants' intention to use the BCT Information about Health Consequences did not increase significantly, due to ceiling effects. This may be because communicating health risks may be a traditional part of some health professional roles, albeit not always conducted effectively (Ahmed, Naik, Willoughby, & Edwards, 2012). The addition of the "Elicit-Provide-Elicit" approach (e.g. Miller & Rollnick, 2012) for tailoring information to clients' needs and providing information respectfully may have helped strengthen participants' confidence and perceived competence, helping overcome the commonly cited barrier to behaviour change conversations regarding fears about damaging rapport with patients (Nelson et al., 2016).

This was a preliminary evaluation of a training course with several limitations. Most importantly, at this initial stage of implementation we were unable to measure changes in actual practice, choosing instead to measure three proximal determinants of behaviour change, confidence (Reuter et al., 2010) perceived competence (Davis et al., 2006) and intention (Webb & Sheeran, 2006) in the short term. We also used commonly applied "1–10" scales as they were feasible to implement in this real-life setting and had been shown to be reliable and valid in a previous methodological study (Preston & Colman, 2000). Other psychometric measures such as self-efficacy measures of efficacy to cope with specific graded challenges may have higher validity (Bandura, 2006), but would have been unfeasible in this course where practitioners face varying challenges specific to their roles and work context. There are also differing views about the relationship between confidence and self-efficacy and indeed whether self-efficacy measures actually reflect motivation to perform a behaviour (Williams & Rhodes, 2016). Self-efficacy and confidence typically have been shown to have considerable overlap, however, measuring confidence may more usefully tap into the course attendees' perceived likelihood of succeeding at implementing the taught components of the course (Stankov, Lee, Luo, & Hogan, 2012). Therefore, it was felt that measuring confidence specifically would better capture practitioners' confidence to perform specific tasks. Whilst intention and self-efficacy are both interim endpoints linked to changes in actual professional behaviour (e.g. Eccles et al., 2006) practitioners may overestimate their own communication skills as compared to service users' or objective judges' views of their skills (Davis et al., 2006; Tongue, Epps, & Forese, 2005). Practitioners also often face barriers to putting learning into practice following training (Byrne-Davis et al., 2017). The teaching of BCTs such as Action Planning aimed to help reduce the intention-behaviour gap, but this may not have guaranteed implementation of learning. Further work could usefully examine the use of BCTs following the course, compared to practitioners' intentions, using audio-recordings of participants' consultations or a follow-up observational visit and conduct larger scale studies using wait list controls. Further work could also test the differential effectiveness of specific teaching techniques and formats, to explore whether including certain BCTs does enhance conversations and effectively support health behaviour change in populations. Finally, the sample was self-selecting which may explain the relatively high intention to use the skills even before the course. Further work is underway to explore effective support for health and social care practitioners without strong intentions to use BCTs, who do not see their role in implementing the health behaviour change agenda.

5 | CONCLUSION

A blended-learning 2-day behavioural science training course for health and social care practitioners led to improvements in confidence, perceived competence and intention to use BCTs. Further evaluation exploring the impact on actual practice is needed to ascertain whether practitioners' improved confidence and intention are maintained in their real-life practice in moving towards flexible, effective behaviour change interventions with the public in their ever-expanding health and social care roles.

5.1 | Implications for practice

This study identifies a way of improving health and social care practitioner confidence to effectively support the public to change health behaviour, a cornerstone of current health behaviour change policy and professional guidance (NICE, 2007, 2014; NHS England, 2014; NHS England, Care Quality Commission, Health Education England, Monitor, Public Health England, & Trust Development Authority, 2014). Applying inter-professional, health psychology-based training with a focus on BCTs to support practice change may help overcome identified health professional

barriers preventing implementation of the national health behaviour change agenda (e.g. Byrne-Davis et al., 2018; Keyworth et al., 2018). Our study also suggests pre-post collection of psychological evaluation data using constructs which predict actual practice as part of routine training evaluation is feasible, moving beyond solely acceptability measures. Further work is needed to generate feasible and acceptable ways of evaluating impact of such training on actual practice behaviours.

ACKNOWLEDGEMENTS

We acknowledge the support of NHS Grampian colleagues who were vital to the course's inception and implementation: Ms Hope Clayton, Trainee Health Psychologist, Dr Andrew Keen, Consultant Health Psychologist, Dr Kirsty MacLennan, Clinical Psychologist, Mr Ray Watkins, Head of Health Improvement, Mr Bruce Archibald, Health Improvement Manager and Mrs Shona Proudfoot, Administrator. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICT OF INTEREST

We, the authors, declare no conflict of interests.

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How to cite this article: Bull R, Dale H. Improving community health and social care practitioners' confidence, perceived competence and intention to use behaviour change techniques in health behaviour change conversations. *Health Soc Care Community*. 2020;00:1–14. https://doi.org/10.1111/hsc.13090